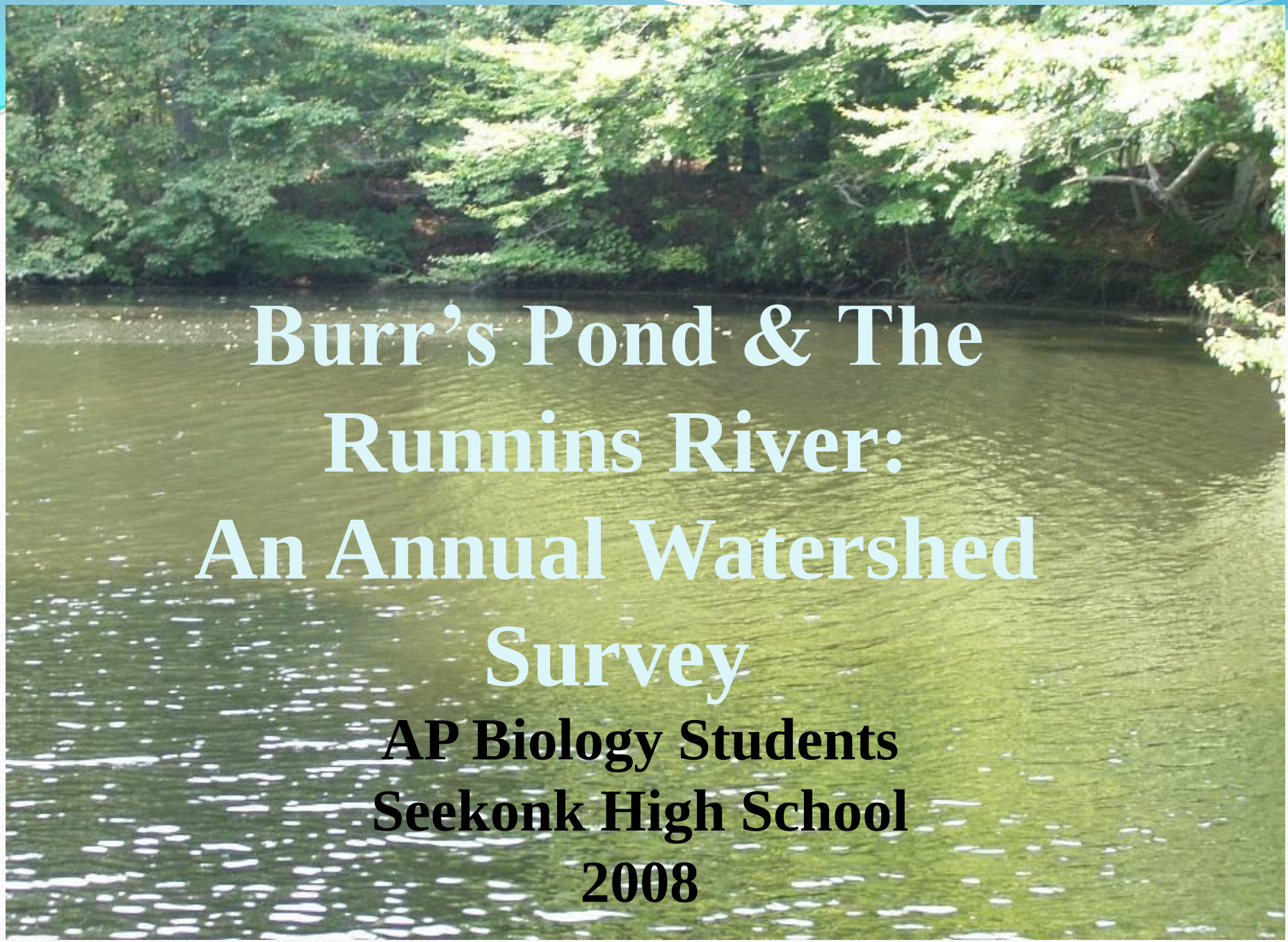
2008

Burr's Pond and Runnins River – An Annual Watershed Survey 2008



Burr's Pond & The Runnins River: An Annual Watershed Survey

AP Biology Students
Seekonk High School
2008

Burr's Pond Research Overview

- Pond Features
  - Meadow-stream pond
  - Location
  - Runnins River sub-watershed;
  - Approximately 1 acre
  - Paths surrounding pond

Burr's Pond Research cont.

- Aspects Explored
  - Biodiversity
  - Ecological Pyramids
  - Food Webs
  - Interactions and Behaviors
  - Predation and Defense
  - Population Densities
  - Abiotic and Biotic Factors
  - Biological Magnification
  - Dissolved Oxygen Levels


Ray Hoddle Way
Mill Road
SITE A
SITE B
FALL RIVER AVENUE
Leonard Street
© 2008 Tele Atlas
Image MassGIS, Commonwealth of Massachusetts EOEA
©2007 Google
Pointer 41°48'53.23" N 71°20'13.56" W elev 31 ft Streaming 100%
Eye alt 2049 ft

Biodiversity

Plant Life





Animal and Fungi Life

Runnin's River: Site A

- Site A of the Runnin's River is a spot at the end of the river before the river flows into Burr's Pond.
- The site we chose had a dense canopy, and was located right before the small bridge crossing the river.
- Site A was about 4 or 5 feet deep, and was very blurry, and filled with silt.
- The bottom of the river was soft and mushy, and had many sticks and rocks.
- The sides of the river had gathered with dead branches, and floating organic matter.

Factors of Dissolved Oxygen at Site A

Factors:

-The canopy blocking the sun from hitting the river, which would decrease/increase the amount of dissolved oxygen.

-The amount of aquatic plant life that live on the water because the plants survive off the oxygen.

-The pollution in the area, if there was more pollution, then that could possibly affect the plants and also the algae that grows on the water.

-Algae covering the pond

-Organisms in the pond

Runnin's River: Site B

Site B at Runnin's River includes a waterfall flowing into a shallow stream. The primary site is the pond, in which the waterfall comes from. At the bottom of the waterfall, there is shallow water with various green plants and rocks within it. There is also an overhanging canopy casting a shadow on the water. The bottom of the stream is filled with pebbles and not many aquatic animals live within this environment.

Factors at Site B

Temperature
-the colder the water, potentially the more dissolved oxygen it can hold.
-affects migration, spawning, and egg incubation in fish

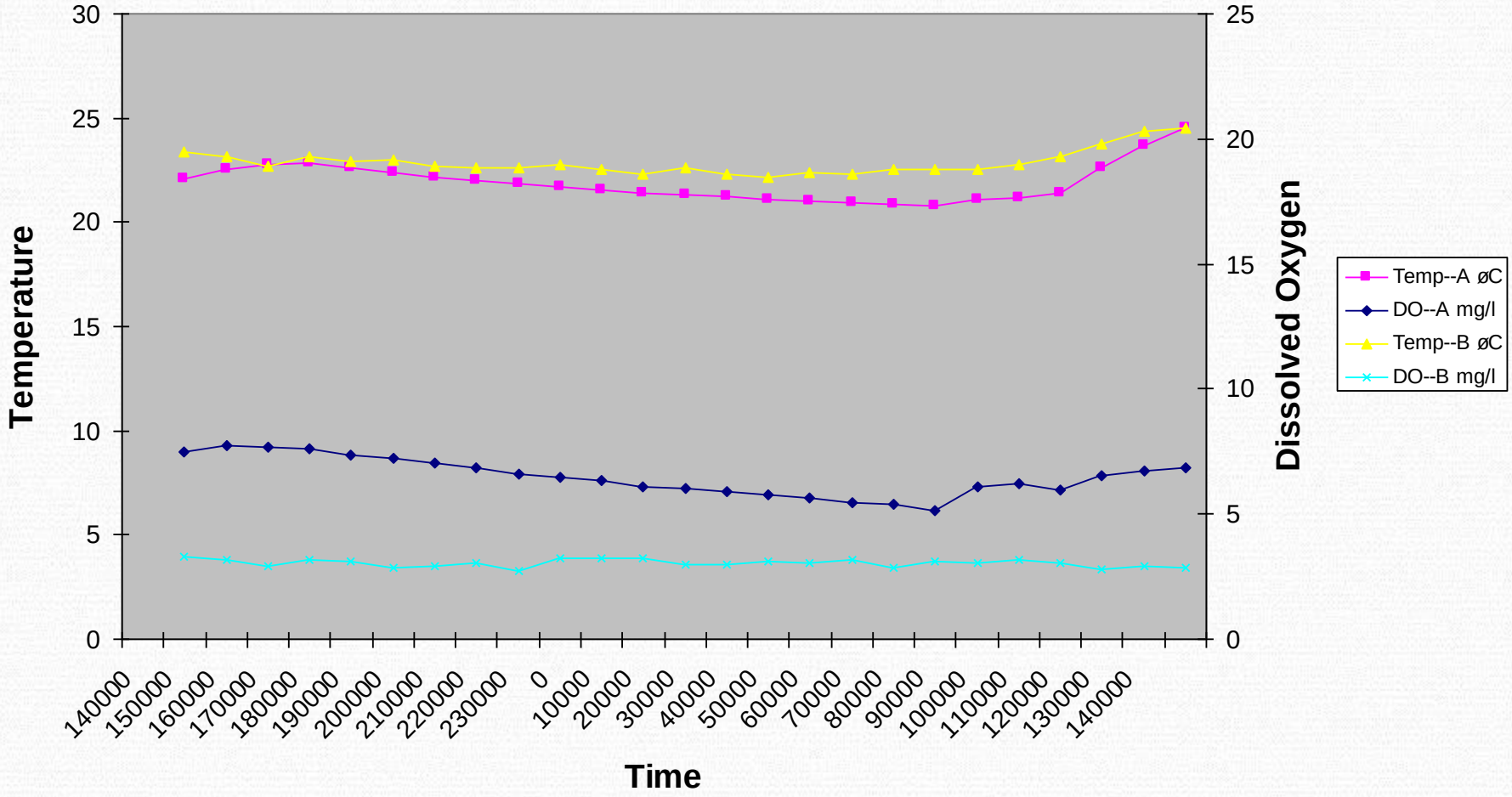
Canopy
a temperature decrease due to overhanging of leaves causing an increase in dissolved oxygen

Pollution
-bacteria feeds off pollution (more oxygen)
-entire aquatic ecosystems maybe disrupted if bacteria uses up the oxygen fish and aquatic insects need

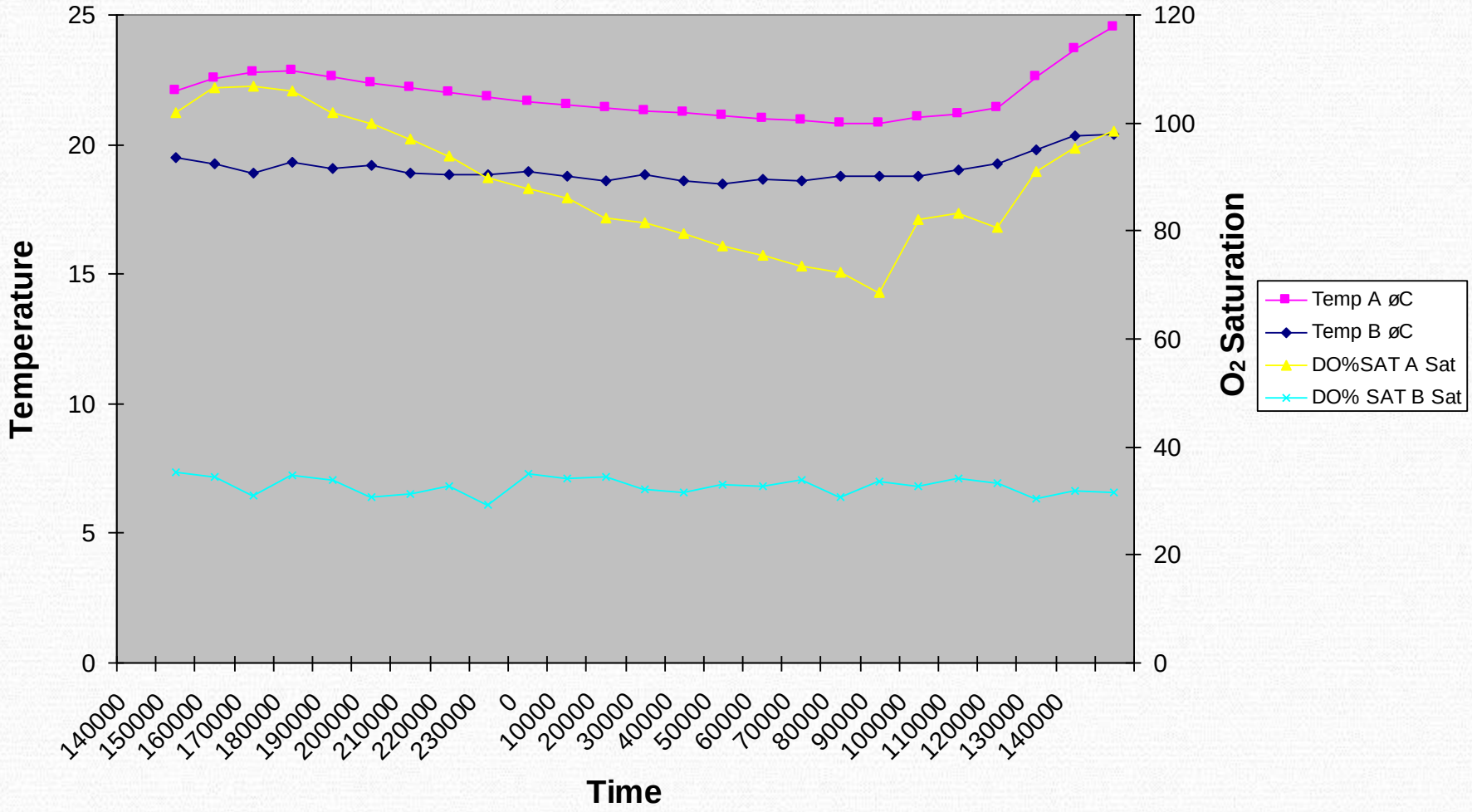
Stream velocity
-oxygen diffuses into the water and mixes as it tumbles by the waterfall

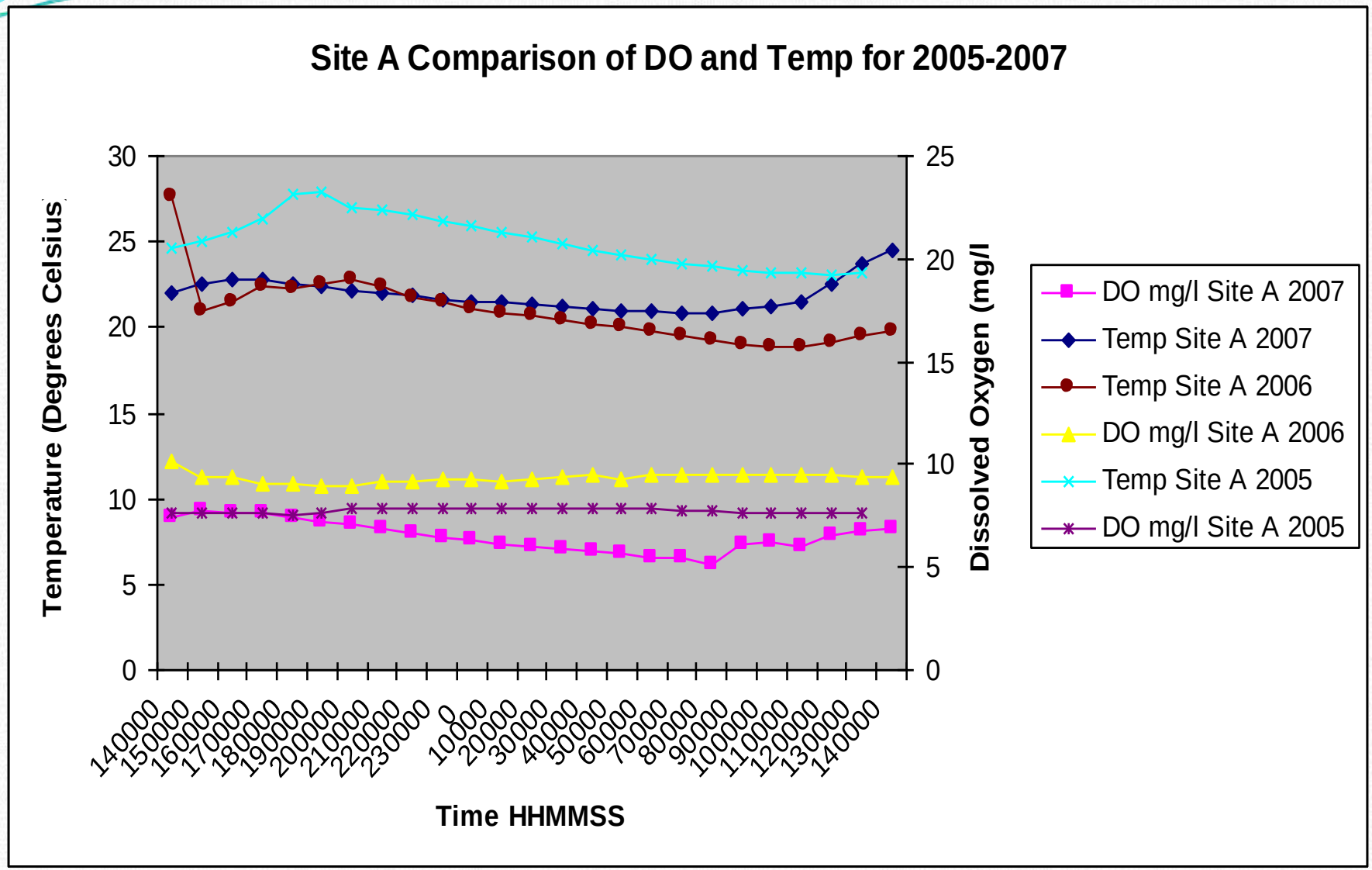
Aquatic Plant Life
-green plants produce oxygen through photosynthesis during the day

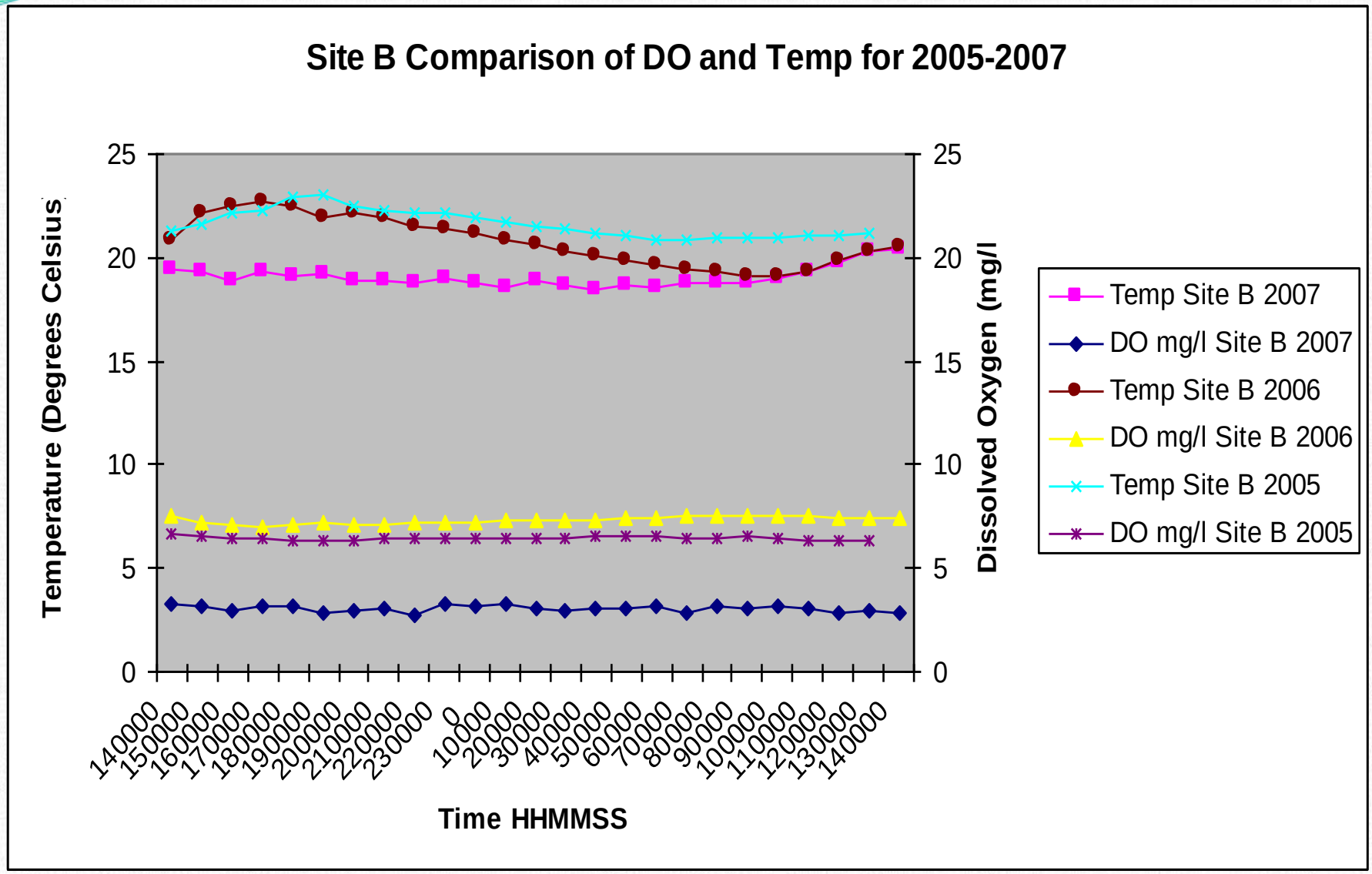
Comparison of Dissolved Oxygen at Sites A and B on the Runnin's River



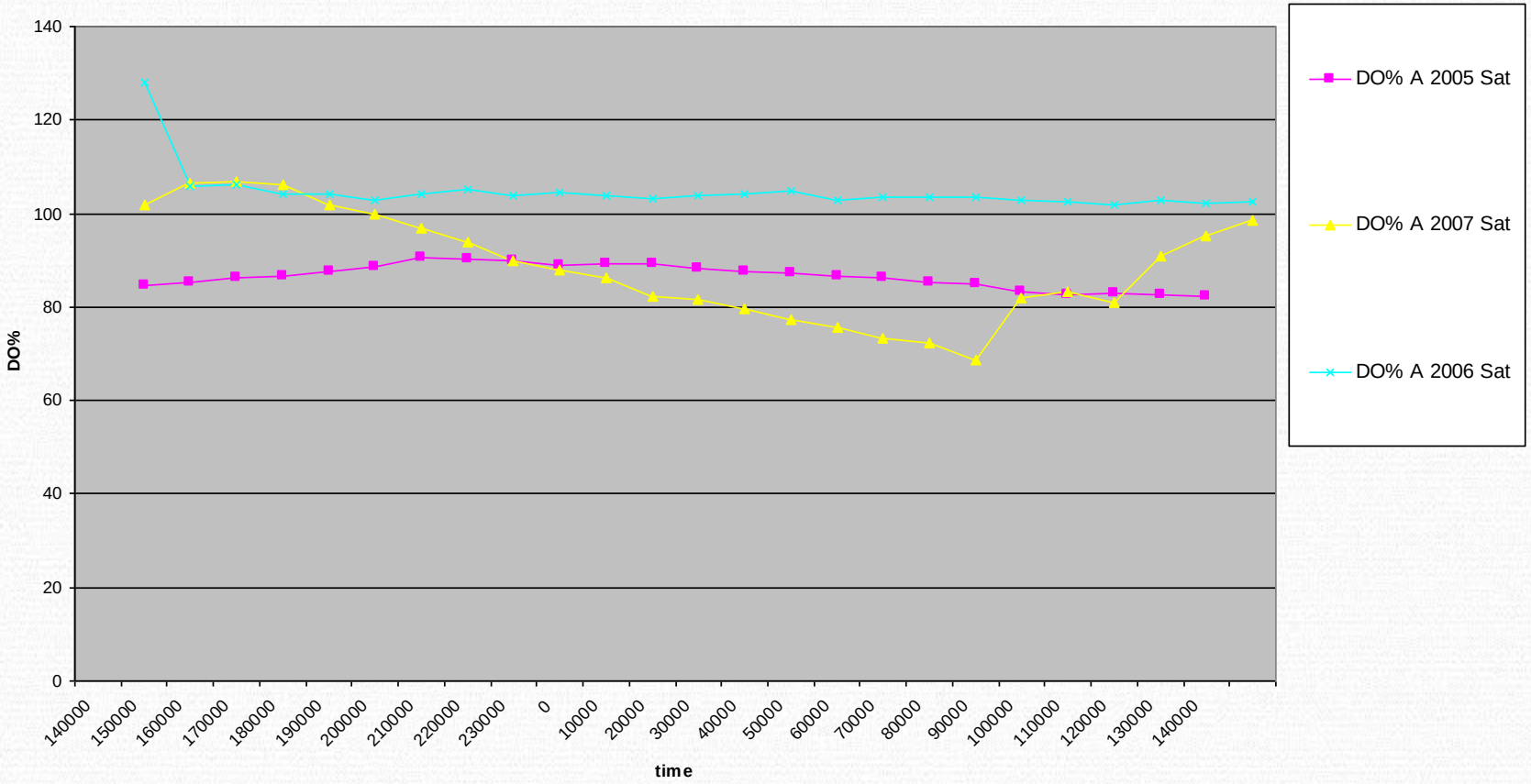
O_2 Saturation Comparison of Sites A & B 2007



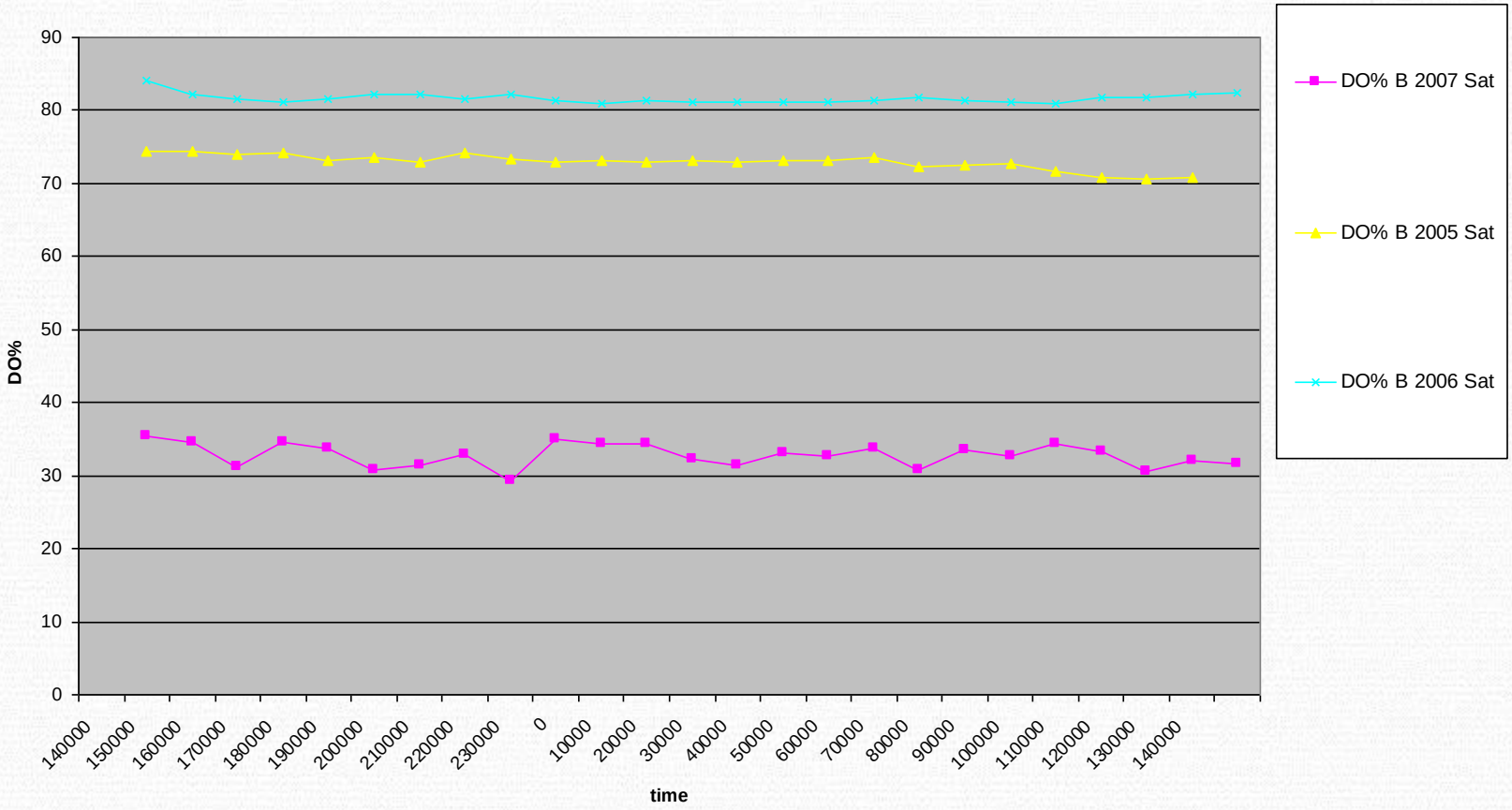

Site A Comparison of DO and Temp for 2005-2007
Temperature (Degrees Celsius
Dissolved Oxygen (mg/l
Time HHMMSS
DO mg/l Site A 2007
Temp Site A 2007
Temp Site A 2006
DO mg/l Site A 2006
Temp Site A 2005
DO mg/l Site A 2005


Site B Comparison of DO and Temp for 2005-2007
Temperature (Degrees Celsius
Dissolved Oxygen (mg/l
Time HHMMSS
0
5
10
15
20
25
140000
150000
160000
170000
180000
190000
200000
210000
220000
230000
0
10000
20000
30000
40000
50000
60000
70000
80000
90000
100000
110000
120000
130000
140000
Temp Site B 2007
DO mg/l Site B 2007
Temp Site B 2006
DO mg/l Site B 2006
Temp Site B 2005
DO mg/l Site B 2005

O_2 Saturation Site A 05,06,07



O_2 Saturation Site B 05, 06, 07



Thanks To:

Watershed Access Lab

Seekonk Land Trust

Mrs. McGovern

AP BIOLOGY 2008

- Melissa, Jon, Jeff
- Cat, Aneesa, Felecia
- Nick C., Sarah, Anna
- Jess L., Sam, Jen M.
- Matt, Nick R., Vanessa
- Kerry, Jen S., Jess S., Heather